CLAIMS: *The following is a listing of all claims as amended with their status and the text of all active claims.*

1) (CURRENTLY AMENDED) Product ~~consisting in~~comprising of an "entangled" sample containing at least one kind of excited isomer nuclides in which at least one said excited isomer nuclide has at least one metastable state ~~that~~ being able of ~~deexcites~~ deexciting by emitting gamma rays, called hereafter deexcitation gamma rays, characterized~~:~~

~~(a) in that groups of two or several excited nuclei of the aforesaid excited isomer nuclides of the aforesaid sample, are entangled between them, the aforementioned sample being called thereafter by convention the "entangled" sample, and presenting quantum coupling between some of the excited nuclei of the aforesaid excited isomer nuclides,~~

~~(b) and,~~ in that the measurable half-life, called thereafter the "variable" half-life, on at least one said excited isomer nuclide of said "entangled" sample, during its natural deexcitation producing said deexcitation gamma rays, is variable, ~~due to the quantum coupling between said entangled excited nuclei of the aforesaid nuclide,~~ the initial said "variable" half-life of the aforesaid excited isomer nuclide being strictly lower than the constant half-life of the ~~aforesaid~~ corresponding normal metastable~~excited~~ isomer nuclide ~~given by the table of isotopes~~, said constant half-life thereafter being called the theoretical half-life ~~of the said excited isomer nuclide~~, and the value of the said "variable" half-life of the aforesaid excited isomer nuclide varying from the value of the said initial "variable" half-life to the value of the said theoretical half-life ~~of the aforesaid excited isomer nuclide~~, then ~~increasing beyond~~being higher than the value of the aforesaid theoretical half-life.

2) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample comprises said excited nuclei of at least one kind of said isomer nuclides having at least one said metastable state with a duration of its theoretical half-life from one microsecond to 50 years, for example, Niobium (93Nb41m), Cadmium (111Cd48m), Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon

(131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

3) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample comprises said excited nuclei of at least one kind of said excited isomer nuclides being radioactive isotopes.

4) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample, comprising said excited nuclei, is in any physical or any chemical form, for example in the form of solid in sheet or powder, or in the form of fluid or gas (case of Xenon for example), said "entangled" sample containing a proportion of at least one or several aforesaid excited isomer nuclides, for example, Niobium (93Nb41m), Cadmium (111Cd48m), Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), Platinum (195Pt78m).

5) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample, comprising said excited nuclei, is in the form of alloys, mixtures, or chemical compounds incorporating a proportion of said excited nuclei from one or several of aforesaid excited isomer nuclides.

6) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample underwent a physical and / or a chemical transformation after its manufacture.

7) (WITHDRAWN~~UNCHANGED~~) Product according to claim 1 further characterized in that the said initial "variable" half-life of at least one of the aforesaid excited isomer nuclides of the "entangled" sample is strictly lower than the theoretical half-life of the aforesaid excited isomer nuclide, for example ranging between 10% and 90% of the theoretical half-life.

8) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample contains said excited nuclei from at least two said excited isomer nuclides.

9) (UNCHANGED) Product according to claim 1 further characterized in that said "entangled" sample contains said excited nuclei from at least one excited isomer nuclide

in at least two said metastable states.

10) (CURRENTLY AMENDED) Manufacturing process of ~~the~~ a product ~~according to claim 1~~comprising of an “entangled” sample ~~in which one uses amongst other things:~~

~~(a) at least one kind of said isomer nuclide having at least one said metastable state,~~

~~(b) irradiation by gamma rays,~~

characterized in that one prepares a product comprising of a sample containing at least some nuclei of at least one ~~said~~ isomer nuclide having at least one ~~said~~ metastable state, by irradiation by means of gamma rays comprising at least some groups of entangled gamma rays, at least some of said groups of entangled gamma rays being of a sufficient energy to excite ~~certain~~ some of ~~the aforesaid~~ said nuclei of ~~the~~ said isomer nuclide ~~in~~ to at least one said metastable state, ~~the aforementioned entangled gamma rays being generated, for example, either by a source of gamma rays emitted in a cascade, or by a generator of gamma rays coming from the Bremsstrahlung of accelerated particles, such as electrons, alpha particles, or protons, the aforementioned groups of entangled gamma rays, exciting and transferring their entanglement to some of the aforementioned corresponding nuclei of the aforesaid isomer nuclide, distributed in the aforementioned irradiated sample~~the excited isomer nuclei that ~~is~~ are produced being ~~,~~ qualified in the continuation ~~by convention “entangled” sample~~as excited isomer nuclide of said “entangled” sample.

11) (CURRENTLY AMENDED~~UNCHANGED~~) Manufacturing process~~Method~~ according to claim 10 further characterized in that the measurable half-life, called thereafter the “variable” half-life, on at least one aforesaid excited isomer nuclide of aforesaid “entangled” sample, during its natural deexcitation producing deexcitation gamma rays, is variable, the initial said “variable” half-life of the aforesaid excited isomer nuclide being strictly lower than the constant half-life of the corresponding normal metastable isomer nuclide, said constant half-life also being called the theoretical half-life, ~~the~~ said initial “variable” half-life ~~of the obtained aforesaid “entangled” sample varies~~ varying with the duration of said irradiation and / or with the power of said irradiation.

12) (CURRENTLY AMENDED) Method to irradiate the environment of the “entangled” sample ~~Use of the product~~ according to claim 1 characterized in that one employs the aforementioned deexcitation gamma radiation, emitted by natural deexcitation of the

aforementioned "entangled" sample, as a source initially emitting a high dose of radiation, then a decreasing dose, and followed by a low dose of radiation for a long time~~, to irradiate the environment of the said "entangled" sample~~.

13) (CURRENTLY AMENDED) ~~Use~~ Method according to claim 12 further characterized in that the aforesaid "entangled" sample deexcitation gamma radiation is used to conduct one or more physicochemical reactions.

14) (CURRENTLY AMENDED) Method ~~Use~~ according to claim 12 further characterized in that one employs the aforesaid "entangled" sample in the form of a solution.

15) (CURRENTLY AMENDED) Method ~~Use~~ according to claim 12 further characterized in that one employs the aforesaid "entangled" sample after having undergone a physical transformation or a chemical conversion following its manufacture.

16) (CURRENTLY AMENDED) Method ~~Use~~ according to claim 12 further characterized in that the aforementioned deexcitation gamma radiation comprises at least two lines of different energies emitted by at least two aforesaid excited isomer nuclides to irradiate the environment of said "entangled" sample.

17) (CURRENTLY AMENDED) Method ~~Use~~ according to claim 12 further characterized in that the aforementioned deexcitation gamma radiation comprises at least two lines of different energies emitted by the same aforesaid excited isomer nuclide to irradiate the environment of said "entangled" sample.

18) (WITHDRAWN) Use according to claim 12 further characterized for a medical treatment.

19) (NEW) Product according to claim 1 characterized in that groups of two or several excited nuclei of the aforesaid excited isomer nuclides of the aforesaid sample, are entangled between them and presenting quantum coupling between some of the excited nuclei of the aforesaid excited isomer nuclides.

20) (NEW) Manufacturing process according to claim 10, in which some of the excited isomer nuclei, that are produced, result from the aforementioned groups of entangled gamma rays, which excite and transfer their entanglement to some of the aforementioned nuclei of the aforesaid isomer nuclide, thus producing groups of excited isomer nuclei.

21) (NEW) Manufacturing process according to claim 10 in which the aforementioned groups of entangled gamma rays are produced by a radioactive source of gamma rays, each said group of entangled gamma rays being emitted in a cascade from a single nucleus.

22) (NEW) Manufacturing process according to claim 10 in which the aforementioned groups of entangled gamma rays are produced by a generator of gamma rays coming from the Bremsstrahlung of accelerated particles.

23) (NEW) Manufacturing process according to claim 22 in which the aforementioned accelerated particles are electrons.

24) (NEW) Manufacturing process according to claim 22 in which the aforementioned accelerated particles are alpha particles, or protons.

Clean text of the national stage entered claims is provided for convenience hereafter:

1) (CURRENTLY AMENDED) Product comprising of an “entangled” sample containing at least one kind of excited isomer nuclides in which at least one said excited isomer nuclide has at least one metastable state being able of deexciting by emitting gamma rays, called hereafter deexcitation gamma rays, characterized in that the measurable half-life, called thereafter the “variable” half-life, on at least one said excited isomer nuclide of said “entangled” sample, during its natural deexcitation producing said deexcitation gamma rays, is variable, the initial said “variable” half-life of the aforesaid excited isomer nuclide being strictly lower than the constant half-life of the corresponding normal metastable isomer nuclide, said constant half-life thereafter being called the theoretical half-life, and the value of the said “variable” half-life of the aforesaid excited isomer nuclide varying from the value of the said initial “variable” half-life to the value of the said theoretical half-life, then being higher than the value of the aforesaid theoretical half-life.

2) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample comprises said excited nuclei of at least one kind of said isomer nuclides having at least one said metastable state with a duration of its theoretical half-life from one microsecond to 50 years, for example, Niobium (93Nb41m), Cadmium (111Cd48m), Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

3) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample comprises said excited nuclei of at least one kind of said excited isomer nuclides being radioactive isotopes.

4) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample, comprising said excited nuclei, is in any physical or any chemical form, for example in the form of solid in sheet or powder, or in the form of fluid or gas (case of Xenon for example), said “entangled” sample containing a proportion of at least one or several aforesaid excited isomer nuclides, for example, Niobium (93Nb41m), Cadmium (111Cd48m), Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), Platinum (195Pt78m).

5) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample, comprising said excited nuclei, is in the form of alloys, mixtures, or chemical compounds incorporating a proportion of said excited nuclei from one or several of aforesaid excited isomer nuclides.

6) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample underwent a physical and / or a chemical transformation after its manufacture.

7) (WITHDRAWN) Product according to claim 1 further characterized in that the said initial “variable” half-life of at least one of the aforesaid excited isomer nuclides of the “entangled” sample is strictly lower than the theoretical half-life of the aforesaid excited isomer nuclide, for example ranging between 10% and 90% of the theoretical half-life.

8) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample contains said excited nuclei from at least two said excited isomer nuclides.

9) (UNCHANGED) Product according to claim 1 further characterized in that said “entangled” sample contains said excited nuclei from at least one excited isomer nuclide in at least two said metastable states.

10) (CURRENTLY AMENDED) Manufacturing process of a product comprising of an "entangled" sample characterized in that one prepares a product comprising of a sample containing at least some nuclei of at least one isomer nuclide having at least one metastable state, by irradiation by means of gamma rays comprising at least some groups of entangled gamma rays, at least some of said groups of entangled gamma rays being of a sufficient energy to excite some of said nuclei of said isomer nuclide to at least one said metastable state, the excited isomer nuclei that are produced being qualified in the continuation as excited isomer nuclide of said "entangled" sample.

11) (CURRENTLY AMENDED) Manufacturing process according to claim 10 further characterized in that the measurable half-life, called thereafter the "variable" half-life, on at least one aforesaid excited isomer nuclide of aforesaid "entangled" sample, during its natural deexcitation producing deexcitation gamma rays, is variable, the initial said "variable" half-life of the aforesaid excited isomer nuclide being strictly lower than the constant half-life of the corresponding normal metastable isomer nuclide, said constant half-life also being called the theoretical half-life, said initial "variable" half-life varying with the duration of said irradiation and / or with the power of said irradiation.

12) (CURRENTLY AMENDED) Method to irradiate the environment of the "entangled" sample according to claim 1 characterized in that one employs the aforementioned deexcitation gamma radiation, emitted by natural deexcitation of the aforementioned "entangled" sample, as a source initially emitting a high dose of radiation, then a decreasing dose, and followed by a low dose of radiation for a long time.

13) (CURRENTLY AMENDED) Method according to claim 12 further characterized in that the aforesaid "entangled" sample deexcitation gamma radiation is used to conduct one or more physicochemical reactions.

14) (CURRENTLY AMENDED) Method according to claim 12 further characterized in that one employs the aforesaid "entangled" sample in the form of a solution.

15) (CURRENTLY AMENDED) Method according to claim 12 further characterized in that one employs the aforesaid "entangled" sample after having undergone a physical transformation or a chemical conversion following its manufacture.

16) (CURRENTLY AMENDED) Method according to claim 12 further characterized in that the aforementioned deexcitation gamma radiation comprises at least two lines of different energies emitted by at least two aforesaid excited isomer nuclides to irradiate the environment of said “entangled” sample.

17) (CURRENTLY AMENDED) Method according to claim 12 further characterized in that the aforementioned deexcitation gamma radiation comprises at least two lines of different energies emitted by the same aforesaid excited isomer nuclide to irradiate the environment of said “entangled” sample.

18) (WITHDRAWN) Use according to claim 12 further characterized for a medical treatment.

19) (NEW) Product according to claim 1 characterized in that groups of two or several excited nuclei of the aforesaid excited isomer nuclides of the aforesaid sample, are entangled between them and presenting quantum coupling between some of the excited nuclei of the aforesaid excited isomer nuclides.

20) (NEW) Manufacturing process according to claim 10, in which some of the excited isomer nuclei, that are produced, result from the aforementioned groups of entangled gamma rays, which excite and transfer their entanglement to some of the aforementioned nuclei of the aforesaid isomer nuclide, thus producing groups of excited isomer nuclei.

21) (NEW) Manufacturing process according to claim 10 in which the aforementioned groups of entangled gamma rays are produced by a radioactive source of gamma rays, each said group of entangled gamma rays being emitted in a cascade from a single nucleus.

22) (NEW) Manufacturing process according to claim 10 in which the aforementioned groups of entangled gamma rays are produced by a generator of gamma rays coming from the Bremsstrahlung of accelerated particles.

23) (NEW) Manufacturing process according to claim 22 in which the aforementioned accelerated particles are electrons.

24) (NEW) Manufacturing process according to claim 22 in which the aforementioned accelerated particles are alpha particles, or protons.